UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

)	
MASSACHUSETTS MUTUAL LIFE)	
INSURANCE COMPANY)	
Plaintiff,)	
)	Civil Action No. 11-30035-PBS
v.)	
)	
RESIDENTIAL FUNDING COMPANY,)	
LLC, *et al.*)	
Defendants.)	
)	

MEMORANDUM AND ORDER

December 9, 2013

Saris, C.J.

I. INTRODUCTION

Plaintiff Massachusetts Mutual Life Insurance Company

("MassMutual") has filed eleven actions[1] against eleven corporate

and thirty-three individual defendants[2] alleging violations of

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[1] Mass. Mut. Life Ins. Co. v. DB Structured Prods., Inc., et
al., 11-cv-30039; Mass. Mut. Life Ins. Co. v. RBS Fin. Prods.,
Inc., et al., 11-cv-30044; Mass. Mut. Life Ins. Co. v. DLJ Mortg.
Capital, Inc., et al., 11-cv-30047; Mass. Mut. Life Ins. Co. v.
Credit Suisse First Boston Mortg. Sec. Corp., et al., 11-cv-
30048; Mass. Mut. Life Ins. Co. v.JPMorgan Chase Bank, N.A., et
al., 11-cv-30094; Mass. Mut. Life Ins. Co. v. Goldman Sachs
Mortg. Co., et al., 11-cv-30126; Mass. Mut. Life Ins. Co. v.
Impac Funding Corp., et al., 11-cv-30127; Mass. Mut. Life Ins.
Co. v. HSBC Bank USA, Nat'l Ass'n, et al., 11-cv-30141; Mass.
Mut. Life Ins. Co. v. Countrywide Fin. Corp., et al., 11-cv-
30215;Mass. Mut. Life Ins. Co. v. Merrill Lynch, Pierce, Finner
& Smith, et al., 11-cv-30285.

[2] MassMutual asserts claims against individual defendants -
officers and directors of certain corporate defendants - in seven

the Massachusetts Uniform Securities Act, Mass. Gen. Laws ch. 110, § 410, based on its purchases of residential mortgage-backed securities ("RMBSs").

Plaintiff purchased 121 securitized certificates, totaling approximately $2 billion, from the corporate defendants in these actions. The 121 certificates represent 95 securitizations, collateralized by 99 unique Supporting Loan Groups ("SLGs"), commonly referred to as "loan pools." The 99 SLGs represent 278,609 individual residential loans. Plaintiff alleges that the certificates concerning each loan pool contained material misrepresentations. In order to determine whether a single loan's riskiness was misrepresented, MassMutual intends to "reunderwrite" the loan, scrutinizing the original loan file to determine whether it was originated in accordance with applicable standards. According to the parties, the process of reunderwriting each loan will take approximately two to three hours and cost hundreds of dollars. In order to avoid the costly

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of the eleven actions. These claims remain pending after Judge Ponsor granted in part and denied in part motions to dismiss filed by defendants in nine of the eleven MassMutual cases. Mem. and Order on Defs. Mot. to Dismiss (Feb. 14, 2012) (11-cv-30035, Dkt. No. 98); Mass. Mut. Life Ins. Co. v. Residential Funding Co., 843 F. Supp. 2d 191, 198 (D. Mass. 2012). By stipulation of the parties, the ruling was applied to the two remaining cases. In one of the cases, 11-cv-30035, claims against two of the three defendants have been stayed pursuant to a joint stipulation and order entered on June 10, 2013 in the bankruptcy action In re Residential Capital, LLC, et al. (S.D.N.Y. Bankr. Case No. 12-12020). Pl.'s Notice of Bankr. Filing (11-cv-30035, Dkt. No. 145).

and time-consuming process of reunderwriting all 278,609

individual loan files, MassMutual intends to analyze and present

information about a 100-loan sample from each of the 99 SLGs.

This approach will require reunderwriting 9,900 loan files.

On April 12, 2013, MassMutual filed a report from its expert

witness Dr. Charles D. Cowan ("Report"). The Report describes the

statistical sampling methodology Dr. Cowan will use to select the

100 sample loans from each loan pool and analyze the rate of

misrepresentation in the sample. Dr. Cowan plans to determine the

probable rate of misrepresentation in the full SLG by

extrapolating from the misrepresentation rate in the sample.

Defendants filed a joint motion to exclude the opinion

expressed in the Report, based on Federal Rule of Evidence 702

and Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579 (1993). An

evidentiary hearing was held on October 18, 2013 at which

Plaintiff's expert Dr. Charles D. Cowan and Defendants' expert

Dr. Arnold Barnett testified. After the evidentiary hearing and a

review of the record, Defendants' Motion to Exclude the Opinions

Expressed in the April 12, 2013 Report of Plaintiff's Expert,

Charles D. Cowan, Ph.D., (11-cv-30039, Dkt. No. 143) is **DENIED.**

II. BACKGROUND

The amended complaints allege that material

misrepresentations were made in the sale of securities in

violation of the Massachusetts Uniform Securities Act (MUSA),

Mass. Gen. Laws ch. 110, § 410. Section 410(a) provides:

> Any person who . . . (2) offers or sells a security by means
> of any untrue statement of a material fact or any omission
> to state a material fact necessary in order to make the
> statements made, in the light of the circumstances under
> which they are made, not misleading, the buyer not knowing
> the truth or omission . . . [or] in the exercise of
> reasonable care could not have known, of the untruth or
> omission, is liable to the person buying the security from
> him . . . .

A plaintiff does not need to show negligence, scienter, reliance,
or causation of loss to prove a MUSA violation, and the buyer's
level of sophistication is irrelevant. Marram v. Kobrick Offshore
Fund, Ltd., 809 N.E.2d 1017, 1026-27 (Mass. 2004).

In seven of the eleven pending cases, MassMutual also
asserts claims against individual defendants for "control person"
liability under Section 410(b), which imposes joint and several
liability on "every person who directly or indirectly controls a
seller liable under [410(a)]." Mass. Gen. Laws ch. 110, § 410(b).

Generally speaking, MassMutual alleges that the defendants
marketed the certificates with representations that the loans
backing the securities were underwritten in accordance with
prudent underwriting standards and the underlying properties were
appraised in accordance with sound appraisal standards, in order
to ensure that the borrower could repay the loan and to decrease
the risk of default. Plaintiff asserts that the loans underlying
each SLG were, in reality, far riskier than represented.
Plaintiff also alleges that the defendants knowingly reported

false loan-to-value ("LTV") ratios, and in the case of defendant HSBC, inaccurate owner-occupancy rates for underlying properties. The defendants deny that they made any material misrepresentations in the marketing and sale of the certificates.

III. EXPERTS

A. Dr. Cowan

Plaintiff's expert, Charles D. Cowan, Ph.D., earned a Bachelor of Arts and a Master of Arts in Economics from the University of Michigan. He holds a doctorate in Mathematical Statistics from George Washington University. Currently, Dr. Cowan is the Managing Partner of Analytic Focus LLC, a consulting group focusing on the design, implementation, and evaluation of statistical and sampling techniques for research. He is also an adjunct professor of biostatistics at the University of Alabama. Among other positions, Dr. Cowan has served as the Chief Statistician of the Federal Deposit Insurance Corporation, director of quantitative methods at PricewaterhouseCoopers LLP, Chief Statistician of the U.S. Department of Education's National Center for Education Statistics, and Chief of the Survey Design Branch of the U.S. Bureau of the Census. Dr. Cowan has taught undergraduate and graduate coursework at various academic institutions and held positions within multiple professional organizations. He has authored numerous books and articles on

statistical design methods. Defendants do not challenge his qualifications.

Dr. Cowan's expert report, together with his testimony, describes his plan to analyze the loans underlying each SLG using statistical sampling, a common technique used to analyze representative samples of large populations. Report ¶¶ 41-45. In his analysis of each securitization, Dr. Cowan will first select one 100-loan sample from the loan pool underlying that securitization. He asserts that the size of the sample will provide scientifically valid conclusions about the full population of loans in each SLG. Dr. Cowan states that a 96-loan sample would achieve a 95% confidence level with a maximum margin of error of ± 10 percentage points, but he "rounded up to 100 out of caution. This 'oversampling' creates a cushion for [the] calculations." Report ¶ 53 n.9. While a larger sample size would decrease the margin of error to ± 5 percentage points, according to Dr. Cowan, the sample size would need to quadruple from 100 to 400. Therefore, he concludes that a 100-loan sample and accompanying ± 10 percentage points margin of error "strikes the correct balance between cost and accuracy." Id. at ¶ 55.

Dr. Cowan's methodology for the selection of the 100 sample loans from each SLG involves the stratification of the entire loan pool in order to "improve the representativeness and reliability" of the sample. Stratification is a process by which

a population of data is divided into mutually exclusive subgroups

by a variable known for the entire population. This occurs before

the sample loans are pulled from the full population.

Stratification cannot increase the margin of error, but can

"reduce the maximum margin of error below ± 10 percent[age

points]." Id. at ¶ 5. The maximum margin of error occurs if the

sample misrepresentation rate is at 50% of the loans; as the

sample rate increases or decreases from 50%, the margin of error

decreases from ± 10 percentage points. Id. at ¶ 58.

Dr. Cowan plans to use each borrower's Fair Isaac

Corporation credit score ("FICO score"),[3] which measures the

creditworthiness of the borrower, as the stratification variable.

He will divide the entire population of loans in a SLG into four

equal groups by FICO score: each loan will be grouped into a

quartile measuring high, somewhat high, somewhat low, and low

FICO scores, as compared to the full population of loans in that

SLG. He will then generate a random number for each loan in each

of the four strata, and reorder the loans in each stratum from

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[3] A credit score is a number representing the creditworthiness of an individual. JOHN DOWNES & JORDAN ELLIOT GOODMAN, DICTIONARY OF FINANCE AND INVESTMENT TERMS 159 (8th ed. 2010). It is used by lenders to predict the likelihood that a borrower will repay his or her debt. A FICO score can range from 300 to 850, with a higher score indicating less risk of borrower default. Dr. Cowan states, "In my experience, lenders, including mortgage loan originators, use credit scores to determine who qualifies for a loan, at what interest rate, and to what credit limits." Report ¶ 59.

lowest to highest random number. Numbers 1 to 25 will serve as
the initial sample, and numbers 26 to 50 will serve as a
supplemental, "back-up" sample from that stratum. Thus, the full
sample from each SLG will include 25 loans from each of the four
strata, for 100 loans total in the sample, with 100 back-up
sample loans (again, 25 from each stratum). If a loan file from
one of the primary sample loans cannot be located, a back-up
sample loan from the same stratum will be available to replace
the missing loan in the primary sample. Dr. Cowan will test the
primary and back-up samples from each SLG against the full
population on eleven variables to ensure that the sample selected
is representative of the full population. Id. at ¶ 64.

Once selected, the sample loans will be re-underwritten to
determine whether material misrepresentations were made in the
certificates about (1) origination in compliance with applicable
underwriting guidelines; (2) appraisals of the underlying
properties in accordance with sound appraisal standards; (3)
number/percentage of loans with LTV ratios above specified
values; and in the HSBC case, 11-cv-30141, (4) the
number/percentage of loans collaterized by owner-occupied
properties. Dr. Cowan will not be involved in the process of
reunderwriting loans; third-party servicers will re-underwrite
the loan files for purposes of this litigation.

Once the loans are reunderwritten and determinations made about the above attributes, Dr. Cowan will extrapolate the results to the full SLG population. Extrapolation is a term used to describe the process of using the results of a sample to draw conclusions about the full population. The Report does not commit itself to using a particular extrapolation method. Dr. Cowan offers two examples of possible extrapolation techniques, and states that he will select the method that "minimizes the margin of error." Id. at ¶ 68. For example, if 50% of the loans collateralizing a SLG contained material misrepresentations, one might simply extrapolate that ratio to the full loan population to conclude with a 95% confidence level that between 40% and 60% of the loans supporting the SLG contained material misrepresentations.

B. Dr. Barnett

Defendants' expert Arnold Barnett, Ph.D., is a professor at the Massachusetts Institute of Technology's Sloan School of Management. Dr. Barnett received his Bachelor of Arts in Physics from Columbia University, and earned a doctorate in Applied Mathematics from M.I.T. Dr. Barnett's research specializes in applied statistical analysis. He has taught probability and statistics at M.I.T. for over thirty-five years. In addition to dozens of articles on applied statistics, he has written a textbook on Probability and Statistics. Plaintiff does not

challenge Dr. Barnett's qualifications. In support of their

Daubert motion, Defendants submitted a declaration by Dr. Barnett

supporting the challenges to Dr. Cowan's methodology. He also

testified at the Daubert hearing. Those challenges are described

in full below.

IV. DISCUSSION

A. The Court's Gatekeeping Role

The admission of expert evidence is governed by Federal Rule

of Evidence 702, which codified the Supreme Court's holding in

Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579 (1993), and

its progeny. See United States v. Diaz, 300 F.3d 66, 73 (1st Cir.

2002). Rule 702 states:

> If scientific, technical, or other specialized knowledge
> will assist the trier of fact to understand the evidence
> or to determine a fact in issue, a witness qualified as
> an expert by knowledge, skill, experience, training, or
> education, may testify thereto in the form of an opinion
> or otherwise, if (1) the testimony is based upon
> sufficient facts or data, (2) the testimony is the
> product of reliable principles and methods, and (3) the
> witness has applied the principles and methods reliably
> to the facts of the case.

Fed. R. Evid. 702.

The trial court must determine whether the expert's

testimony "both rests on a reliable foundation and is relevant to

the task at hand" and whether the expert is qualified. Daubert,

509 U.S. at 597; Diaz, 300 F.3d at 73. An expert's methodology is

the "central focus of a Daubert inquiry." Ruiz-Troche v. Pepsi

Cola of P.R. Bottling Co., 161 F.3d 77, 81 (1st Cir. 1998).

Daubert itself listed four factors which should guide judges in this determination: (1) whether the theory or technique can be and has been tested; (2) whether the technique has been subject to peer review and publication; (3) the technique's known or potential rate of error; and(4) the level of the theory's or technique's acceptance within the relevant discipline. United States v. Mooney, 315 F.3d 54, 62 (1st Cir. 2002) (citing Daubert, 509 U.S. at 593-94). "These factors, however, are not definitive or exhaustive, and the trial judge enjoys broad latitude to use other factors to evaluate reliability." Mooney, 315 F.3d at 62 (citing Kumho Tire Co. v. Carmichael, 526 U.S. 137, 153 (1999)).

The Court must, however, keep in mind the Supreme Court's admonition that "[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence." Daubert, 509 U.S. at 596. If an expert's testimony is within "the range where experts might reasonably differ," the jury, not the trial court, should be the one to "decide among the conflicting views of different experts." Kumho Tire, 526 U.S. at 153. As the First Circuit has stated:

> In short, Daubert neither requires nor empowers trial courts to determine which of several competing scientific theories has the best provenance. It demands only that the proponent of the evidence show that the expert's conclusion has been arrived at in a scientifically sound and methodologically reliable fashion.

Ruiz-Troche, 161 F.3d at 85. It is with these principles in mind that the Court assesses the defendants' motion.

B. A Sneak Preview

As a preliminary matter, plaintiff asked for an early determination of the reliability of its sampling methodology. Defendants press the argument that it is premature to determine the admissibility of Dr. Cowan's sampling methodology set forth in his April 12, 2013 report before he has applied it to the reunderwriting results. A magistrate judge granted MassMutual's motion for an early determination (11-cv-30039, Dkt. No. 117) and the matter was set for hearing before the judge originally assigned to the case.

Early resolution of the viability of the sampling methodology makes sense as a case management matter. See David H. Kaye & David A. Freedman, *Reference Guide On Statistics*, *in* FEDERAL JUDICIAL CENTER, REFERENCE MANUAL ON SCIENTIFIC EVIDENCE 211, 216 (3d ed. 2011) ("To minimize debates at trial over the accuracy of data and the choice of analytical techniques, pretrial discovery procedures should be used, particularly with respect to the quality of the data and the method of analysis."). The plaintiff would have to incur significant expense and the litigation would be unnecessarily delayed, if the sampling methodology does not survive a Daubert challenge late in the litigation. For example,

an additional 300 loan files, or more, could have to be reunderwritten for each securitization at issue. While defendants argue some of the sampling issues might have to be reexamined in light of the extrapolation methodology chosen, defendants have not persuasively shown this is likely.

C. The Challenge

In challenging the Report, the defendants do not challenge Dr. Cowan's expertise. Rather, Defendants identify six methodological errors that they claim render the Report's sampling protocol unreliable. Similar challenges have failed in other actions involving RMBSs. See In re Countrywide Fin. Mortg. Backed Sec. Litig., 2013 WL 6231713, – F. Supp. 2d – (C.D. Cal. Dec. 2, 2013); Fed. Hous. Fin. Agency v. JPMorgan Chase & Co., 2012 WL 6000885 (S.D.N.Y. Dec. 3, 2012); In re Washington Mut. Mortg. Backed Sec. Litig., 2012 WL 2995046 (W.D. Wash. July 23, 2012); MBIA Ins. Corp. v. Countrywide Home Loans, Inc., 958 N.Y.S.2d 647, 2010 WL 5186702 (Sup. Ct. Dec. 22, 2010).

1. Extrapolation Method

Defendants contend that Dr. Cowan failed to provide a specific extrapolation method. Although Dr. Cowan describes two possible ways to extrapolate data to a full SLG population, the Report does not commit itself to a certain extrapolation method. Instead, he asserts that it is prudent to select a method after the sample design is confirmed and test results determined.

Defendants highlight a statement made by Dr. Cowan at his deposition that determining the extrapolation method is "integral" to "planning for and acceptance of sampling as a viable scientific method." Cowan Dep., Tr. 226. Dr. Cowan clarified his view at the Daubert hearing that it is not necessary to choose a method of extrapolation *before* reunderwriting in order to have a valid sample design. Hr'g Tr. 94.

Defendants' expert Dr. Barnett states that Dr. Cowan cannot later choose an extrapolation method that minimizes the margin of error because Dr. Cowan stratified the population before pulling sample loans and thus committed himself to one of the extrapolation formulae pertinent to proportional stratified sampling. Hr'g Tr. 193-94; Barnett Report ¶ 37-38; Barnett Dep., Tr. 170-72. Even if Dr. Cowan is unable to reduce the margin of error below ± 10 percentage points through the use of a margin-reducing extrapolation method, that does not render his methodology unreliable. Dr. Cowan testified that he will test multiple extrapolation methods once he gets the reunderwriting results, utilizing perhaps as many as twenty techniques. Hr'g Tr. 92-93. So long as Dr. Cowan ultimately employs an extrapolation technique which is itself reliable, the failure to specify the specific method in his Report does not make his sampling methodology excludable in this preliminary review.

2. Binary Nature of Inquiries

Defendants primary challenge hinges on the assertion that Dr. Cowan's methodology erroneously depends on binary answers to questions of misrepresentation. Dr. Barnett testified that the formulae used by Dr. Cowan "are predicated on a binary analysis where you have a series of data points; there's a yes/no question for every single one of them." If the question is not binary, they argue, then Dr. Cowan's statistical analysis, including maximum margin of error, is incorrect. Hr'g Tr. 162-63. Defendants argue that the four major inquiries (compliance with underwriting guidelines, compliance with appraisal standards, understatement of LTV ratios, and overstatement of owner-occupancy rates) depend on complex and subjective analyses and cannot be reduced to simple "yes-no" formulations. Specifically, they emphasize that the originators' underwriting guidelines were not strict, inflexible rules and expressly permitted exceptions. Plaintiff counters that the questions, as framed, are binary, since the loans were either valid under relevant criteria or not.

At the <u>Daubert</u> hearing, Dr. Barnett acknowledged that some of these questions are or may be binary. Hr'g Tr. 181:10-22 (compliance with underwriting guidelines); 173:19-174:12 (compliance with appraisal standards, provided set benchmarks are accepted); 172:15-20 (owner occupancy status). Defendants press the issue concerning the accuracy of the LTV and CLTV ratios

stated in the offering documents. A LTV ratio is the ratio of the mortgage loan's original principal balance to the appraised value or sales price of the mortgaged property. A CLTV ratio is a similar calculation for properties with two or more loans. Defendants continue to emphasize that the weighted average LTV and CLTV are continuous variables, meaning that each observation may have many possible values.

Plaintiff concedes that a benchmark for materiality must be set, and that a determination of the average weighted LTV/CLTV involves a review of individual loan files that will ask a series of non-binary questions. Still, as Plaintiff points out, once a weighted average LTV/CLTV for the 100 loans is calculated, it is a binary question whether it is materially different from the percentage stated in the offering materials. See Assured Guar. Mun. Corp. v. Flagstar Bank, 920 F. Supp. 2d 475, 503 (S.D.N.Y. 2013). While some of the underlying steps or formulae may involve non-binary questions, defendants may later challenge the methodology used by the reunderwriters for calculating the average as unreliable or deserving of less weight.

3. Multi-Originator Scenario

Defendants' strongest argument is that the methodology cannot distinguish among originators. In 57 of the 99 SLGs at issue in these cases, the SLG is backed by loans originated from multiple lenders. As the defendants rightly point out, different

originators may have followed different underwriting guidelines and adhered to different practices in issuing loans.

Defendants offer an example from the action against Deutsche Bank. The prospectus supplement for the ACE 2006-SL1 securitization lists three originators, but only discloses underwriting criteria and appraisal standards for the two originators that originated 20% or more of the asset pool, American Home Mortgage Corporation and Residential Funding Corporation. In other words, Deutsche Bank never made any representations as to the appraisal standards of the third named originator, Chapel Funding Corporation, and therefore cannot be said to have made a *mis*representation about Chapel Funding. The defendants argue that only loans from American Home and Residential Funding would be relevant for sampling purposes. Perhaps in response to this challenge, plaintiff dropped this securitization as a basis for liability.

Plaintiff correctly responds that the question is not whether each originator is liable for material misrepresentations, but whether the defendants themselves made misrepresentations in the certificates regarding the underwriting standards applied to, and LTV and appraisal information for, all loans backing the certificates. See Fed. Hous. Fin. Agency, 2012 WL 6000885, at *10. However, to the extent the offering documents differentiate among the originators, defendants may well be right

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that the sampling methodology, as proposed, is inadequate. Dr.
Cowan acknowledged at hearing that sampling from the entire loan
pool where representations were only made in say, 20% of the
loans in the pool, could widen the margin of error. Hr'g Tr. 134-
35.

Although Defendants assert that certain alleged
misrepresentations in the certificates are specific to certain
originators, the record is unclear as to the specific
certificates where the sampling methodology may need to be
adjusted. I will reserve this issue until the expert evaluates a
sample for the specific representations in each action.

4. Margin of Error

Defendants argue that Dr. Cowan's ± 10 percentage point
margin of error is twice as wide as the typical margin of error
in the litigation context, noting that Dr. Cowan's reports in
other mortgage-backed securities actions have employed a ± 5
percentage point margin of error. E.g., MBIA Ins. Corp., 2010 WL
5186702 at *5. Defendants bolster this contention with examples
outside litigation, noting that the U.S. Department of Housing
and Urban Development ("HUD") and the Federal Home Loan Mortgage
Corporation ("Freddie Mac") each employ a ± 2 percentage point
margin of error in their respective quality control guidelines.
In other words, Defendants assert that the sample size of 100
loans is too small, and a larger sample size will reduce the

margin of error. See REFERENCE MANUAL ON SCIENTIFIC EVIDENCE, supra at 246 ("Generally, increasing the size of the sample will reduce the level of random error ('sampling error').").

As Dr. Barnett concedes, though, using a confidence interval of 20 percentage points does not make a statistical methodology inherently unreliable. Hr'g Tr. 185-87; Barnett Dep., Tr. 100-102. Plaintiff takes the risk that using the ± 10 percentage point margin of error will result in a lower estimated rate of defective loans backing the certificates. As other courts have concluded, the ± 10 percentage point margin of error does not render Dr. Cowan's methodology unreliable. The margin of error speaks to the "persuasive power of the sample, not its admissibility." Fed. Hous. Fin. Agency, 2012 WL 6000885, at *10; see also In re Countrywide, 2013 WL 6231713, at *8-9.

5. *Stratification of Loan Population by FICO Score*

Defendants object to Dr. Cowan's assertion that a borrower's FICO score is an appropriate stratification variable. However, as Dr. Cowan testified, and defendants' expert concedes, even if stratification does not diminish the margin of error, it cannot *increase* the margin of error. Hr'g Tr. 84-85; Barnett Dep., Tr. 127-29, 134. Stratification increases the precision. See GEORGE W. SNEDECOR & WILLIAM G. COCHRAN, STATISTICAL METHODS 441-442 (8th ed. 1989) (hereinafter "COCHRAN") ("If we can form strata so that a heterogeneous population is divided into parts, each of which is

fairly homogeneous, we may expect a substantial gain in precision over simple random sampling."). Moreover, defendants don't provide a persuasive reason why the borrower's FICO score is not a useful criterion. Cf. In re Countrywide, 2013 WL 6231713, at *11 ("The use of FICO scores as the selected stratification variable comports with common sense . . . since higher FICO scores indicate a positive borrower credit history and a lower risk borrower profile.").

Defendants also object to Dr. Cowan's proposed practice of automatically assigning a loan missing a FICO score to the lowest quartile. Dr. Cowan explains that a missing FICO score is, in his experience, indicative of a loan underwriting breach. Hr'g Tr. 81-82; Cowan Decl. in Response to Barnett Decl. ¶ 25. Dr. Cowan did not make the factual basis for this assumption clear. However, it is premature to challenge the methodology on this ground because the record is unclear as to how many files are missing FICO scores.

6. Possibility of Missing Loan Files

Defendants assert that the probable absence of some loan files renders the full sample non-random and statistically unreliable. Plaintiff responds that Dr. Cowan's proposal to create a randomized 100-loan "back-up" sample is a statistically acceptable method to anticipate and address potential snafus in collecting loan files. Defendants' arguments have been rejected

by other district courts. <u>See</u> <u>In re Countrywide</u>, 2013 WL 6231713, at *7-8; <u>Fed. Hous. Fin. Agency</u>, 2012 WL 6000885, at *10; <u>In re Washington Mut.</u>, 2012 WL 2995046, at *22. Missing data are common in statistical sampling surveys. COCHRAN, <u>supra</u>, at 454; David W. Chapman, Substitution for Missing Units, *in* PROCEEDINGS OF THE SURVEY RESEARCH METHODS SECTION, AMERICAN STATISTICAL ASSOCIATION 76, 76 (1982). To the extent that, as the defendants suggest, an unexpected event such as the absence of all files from a single originator skews the full sample of the SLG,[4] Dr. Cowan will address the impact of the missing files in his analysis and presentation of the data. Hr'g Tr. 85-86; Cowan Dep., Tr. 207-13; Barnett Dep., Tr. 149-54; <u>see also</u> COCHRAN, <u>supra</u>, at 273-75, 454-55; Tom W. Smith, Notes on the Use of Substitution in Surveys (Apr. 2007), *available at* www.issp.org/member/documents/Substitution _MC_Review.doc (unpublished manuscript distributed to International Social Survey Programme members). The defendants can challenge Dr. Cowan's methodology for replacing missing files later in the litigation.

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[4] For example, Dr. Cowan mentioned that all the records of one originator were destroyed by Hurricane Sandy. Hr'g Tr. 128-29.

V. ORDER

The Motion to Exclude the Opinions Expressed in the April 12, 2013 Report of Plaintiff's Expert, Charles D. Cowan, Ph.D., (11-cv-30039, Dkt. No. 143) is **DENIED** without prejudice.

        /s/ PATTI B. SARIS
        Patti B. Saris
        Chief United States District Judge